CLAIMS

What is claimed as new and desired to be protected by Letters Patent of the United States is:

1. A method of testing a modulation transfer function (MTF) of an imager comprising photosensitive cells, the method comprising:

exposing the imager to a photon source;

measuring an output of first and second photosensitive cells, wherein the first cell is blocked from the photon source by a layer of opaque material; and

calculating the MTF using the measured outputs.

2. The method of claim 1, wherein said first and second photosensitive cells are adjacent.

3. The method of claim 1, wherein said method occurs during an automated testing process.

4. The method of claim 3, wherein said method occurs during probe testing of an imager array.

5. The method of claim 1, wherein said photon source has an intensity below photosensitive cell saturation intensity.

6. The method of claim 1, wherein said opaque material forms a mask for a plurality of photosensitive cells of said imager array.

7. The method of claim 6, wherein said masking is formed during fabrication of said imager array.

8. The method of claim 6, wherein said opaque mask covers a predetermined number of rows on at least one edge of said imager array.

9. The method of claim 6, wherein said opaque mask covers a predetermined number of columns on at least one edge of said imager array.

10. The method of claim 6, wherein said opaque mask covers a predetermined number of rows and columns on at least two edges of said imager array.

11. The method of claim 6, wherein said opaque mask covers a predetermined number of rows and columns on four edges of said imager array.

12. The method of claim 1, wherein said measuring includes the averaging of output signals from a first column and averaging the output signal from a second column of adjacent photosensitive cells.

13. The method of claim 1, wherein said opaque material is comprised of a metal.

14. The method of claim 1 further comprising aligning an edge of said opaque material between a row or column of said imager.

15. The method of claim 1, wherein said imager is a CMOS imager.

16. The method of claim 1, wherein said imager is a CCD imager.

17. A method of testing a modulation transfer function (MTF) of an imager comprising photosensitive cells, the method comprising:

exposing a first imager to a collimated photon source;

measuring an output of first and second adjacent photosensitive cells, wherein the first cell is blocked from the photon source by a layer of opaque material;

calculating the MTF using the measured output to form a test standard;

exposing the first imager to a non-collimated photon source;

measuring an output of first and second adjacent photosensitive cells, wherein the first cell is blocked from the photon source by a layer of opaque material;

calculating the MTF using the measured output for the test using the non-collimated photon source;

comparing results of said first standardizing test with results of said second test using a non-collimated photon source; and

determining whether said results attained with said second test using the non-collimated photon source are within an acceptable error margin as compared with the result attained with said first standardizing test.

18. The method of claim 17 further comprising aligning an edge of said opaque material between a row or column of photosensitive cells of said imager.

19. The method of claim 17 further comprising performing said second test on a plurality of second imagers if said test using the first imager is within an acceptable error margin.

20. The method of claim 17, wherein said method occurs during an automated testing process.

21. The method of claim 20, wherein said method occurs during probe testing of an imager array.

22. The method of claim 17, wherein said opaque material is comprised of a metal.

23. The method of claim 17, wherein said collimated and non-collimated photon source has an intensity below photosensitive cell saturation intensity.

24. The method of claim 17, wherein said imager is a CMOS imager.

25. The method of claim 17, wherein said imager is a CCD imager.

26. A method of testing a modulation transfer function (MTF) of an imager comprising photosensitive cells, the method comprising:

exposing a first and second predetermined number of photosensitive cells in at least one of a row and column of adjacent photosensitive cells of the imager to a photon source, wherein the first predetermined number of photosensitive cells are blocked from the photon source by a layer of opaque material;

measuring an output of the first and second predetermined number of photosensitive cells; and

calculating the MTF using the measured outputs.

27. The method of claim 26 further comprising aligning an edge of said opaque material between a row or column of said imager.

28. The method of claim 26, wherein said method occurs during an automated testing process.

29. The method of claim 28, wherein said method occurs during probe testing of an imager array.

30. The method of claim 26, wherein said first and second measuring comprise averaging measurements taken from said plurality of

blocked photosensitive cells and averaging measurements taken from a plurality of unblocked photosensitive cells.

31. The method of claim 26, wherein said opaque material forms a mask for a plurality of photosensitive cells of said imager array.

32. The method of claim 31, wherein said opaque material is comprised of a metal.

33. The method of claim 31, wherein said forming comprises masking said at least one photosensitive cell during fabrication of said imager array.

34. The method of claim 31, wherein said opaque mask covers a predetermined number of rows and columns on at least one edge of said imager array.

35. The method of claim 26, wherein said imager is a CMOS imager.

36. The method of claim 26, wherein said imager is a CCD imager.

37. A method of testing a modulation transfer function (MTF) of an imager comprising photosensitive cells, the method comprising:

exposing a first imager to a collimated photon source;

measuring an output of a first row or column and a second row or column of adjacent photosensitive cells, wherein the first row or column of cells are blocked from the photon source by a layer of opaque material;

calculating the MTF using the measured outputs to form a test standard;

exposing the first imager to a non-collimated photon source;

measuring an output of said first row or column and said second row or column of adjacent photosensitive cells;

calculating the MTF using the measured outputs for the test using the non-collimated photon source;

comparing results of said first standardizing test with results of said second test using a non-collimated photon source; and

determining whether said results attained with said second test using the non-collimated photon source are within an acceptable error margin as compared with the result attained with said first standardizing test.

38. The method of claim 37 further comprising aligning an edge of said opaque material between a row or column of said imager.

39. The method of claim 37 further comprising performing said test on a plurality of second imagers if said test using the first imager is within an acceptable error margin.

40. The method of claim 37, wherein said method occurs during an automated testing process.

41. The method of claim 40, wherein said method occurs during probe testing of an imager array.

42. The method of claim 37, wherein said opaque material is comprised of a metal.

43. The method of claim 37, wherein said collimated and non-collimated photon source has an intensity below photosensitive cell saturation intensity.

44. The method of claim 37, wherein said imager is a CMOS imager.

45. The method of claim 37, wherein said imager is a CCD imager.

46. A computer program stored on a computer readable storage medium for operating a computer to perform a method of testing an imager array, the method comprising:

exposing the imager to a photon source;

measuring an output of first and second photosensitive cells, wherein the first cell is blocked from the photon source by a layer of opaque material; and

calculating the MTF using the measured outputs.

47. The computer program of claim 46, wherein said first and second cells are adjacent.

48. The computer program of claim 47, wherein a plurality of photosensitive cells blocked by said opaque material are measured and a plurality of photosensitive cells not blocked by said opaque material, adjacent to said blocked photosensitive cells are measured.

49. The computer program of claim 48, wherein said measuring includes the averaging of output signals from a first column and averaging the output signal from a second column of adjacent photosensitive cells.

50. A computer program stored on a computer readable storage medium for operating a computer to perform a method of testing an imager array, the method comprising:

exposing a first and second predetermined number of photosensitive cells in at least one of a row and column of adjacent photosensitive cells of the imager to a photon source, wherein the first predetermined number of

photosensitive cells are blocked from the photon source by a layer of opaque material;

measuring an output of the first and second predetermined number of photosensitive cells; and

calculating the MTF using the measured outputs.

51. The computer program of claim 50, wherein said measurements taken from said plurality of photosensitive cells blocked by said opaque material are averaged and said plurality of photosensitive cells not blocked by said opaque material, adjacent to said blocked photosensitive cells are averaged

52. An apparatus for testing a modulation transfer function (MTF) of an imager comprising photosensitive cells, the apparatus comprising:

an opaque material blocking a plurality of rows and columns of photosensitive cells; and

a window in the opaque material, wherein the edge of said window is aligned between adjacent rows or columns of photosensitive cells of the imager.

53. The apparatus of claim 52 further comprising measuring an output from said adjacent photosensitive cells for calculation of the modulation transfer function.

54. The apparatus of claim 53, wherein said measurement occurs during an automated testing process.

55. The apparatus of claim 52, wherein a plurality of photosensitive cells blocked by said opaque material are measured and a plurality of photosensitive cells not blocked by said opaque material, adjacent to said blocked photosensitive cells are measured.

56. The apparatus of claim 55, wherein said measurements taken from said plurality of photosensitive cells blocked by said opaque material are averaged and said plurality of photosensitive cells not blocked by said opaque material, adjacent to said blocked photosensitive cells are averaged.

57. A test system for an imager array containing photosensitive cells, the test system comprising:

a light source for exposing at least a portion of the imager array to photons;

a processor coupled to an output of first and second adjacent photosensitive cells of said array, wherein the first cell is blocked from the photon source by a layer of opaque material, said processor determining a modulation transfer function of said imager array from the output signal of said blocked and unblocked photosensitive cells.

58. The system of claim 57, wherein said imager contains an opaque material which defines said blocked and unblocked photosensitive cells.

59. The system of claim 57, wherein a plurality of photosensitive cells blocked by said opaque material are measured and a plurality of photosensitive cells not blocked by said opaque material, adjacent to said blocked photosensitive cells are measured.

60. The system of claim 59, wherein said measurements taken from said plurality of photosensitive cells blocked by said opaque material are averaged and said plurality of photosensitive cells not blocked by said opaque material, adjacent to said blocked photosensitive cells are averaged.

61. The system of claim 57, wherein said light source has an intensity below photosensitive cell saturation intensity.

62. A test system for an imager array containing photosensitive cells, the test system comprising:

a light source for exposing at least a portion of the imager array to photons;

a processor coupled to an output of a first and second predetermined number of photosensitive cells in at least one of a row and column of adjacent photosensitive cells of said array, wherein the first predetermined number of photosensitive cells are blocked from the light source by a layer of opaque material, said processor determining a modulation transfer function of said imager array from the output signal of said blocked and unblocked photosensitive cells.

63. The system of claim 62, wherein said imager contains an opaque material which defines said blocked and unblocked photosensitive cells.

64. The system of claim 62, wherein said determining averages said output from said plurality of photosensitive cells blocked by said opaque material and averages said output from said plurality of photosensitive cells not blocked by said opaque material, adjacent to said blocked photosensitive cells are averaged.

65. The system of claim 62, wherein said light source has an intensity below photosensitive cell saturation intensity.